

1. (Amended) An optical device for focusing light emitted from a light-generating source of a dental instrument, the optical device comprising:

a lens having a first end that is substantially flat and a second end that is curved, wherein the substantially flat first end is configured for receiving light from the light-generating source, and wherein the curved second end is configured for focusing the light received by the first end; and

means for holding the first end of the lens adjacent to the light-generating source;

and

means for protecting the lens from contact.

2. (Amended) An optical device as defined in claim 1, wherein the lens comprises at least one of glass, aluminum dioxide, sapphire, quartz, acrylic, polyacrylic, polypropylene, and silicone.

3. (Amended) An optical device as defined in claim 1, wherein at least a portion of the second end of the lens has an aspheric curvature.

4. (Amended) An optical device as defined in claim 3, wherein the aspheric curvature comprises at least one of a hyperbolic curvature, an elliptical curvature, and a parabolic curvature.

5. (Amended) An optical device as defined in claim 1, wherein at least a portion of the second end has a hemispherical curvature.

6. (Amended) An optical device as defined in claim 1, wherein the means for holding and the means for protecting comprise a transparent shield that is removably attachable to the dental instrument and which frictionally engages the lens.

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7. (Amended) An optical device as defined in claim 6, wherein the transparent shield protects the aspheric lens from making contact with light-curable compounds while allowing light from the light-generating source to pass through the shield.

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8. (Amended) An optical device as defined in claim 7, wherein the transparent shield comprises at least one of glass, aluminum dioxide, sapphire, quartz, acrylic, polyacrylic, polypropylene, and silicone.

9. (Amended) An optical device as defined in claim 8, wherein the transparent shield comprises a conical portion having an apex.

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10. (Amended) An optical device as defined in claim 9, wherein the second end of the aspheric lens focuses light from the light-generating source into a column of light having a diameter of about 8 mm at a distance of about 3 mm to about 5 mm from the apex of the transparent shield.

12. (Amended) An optical device for focusing light emitted from a light-generating source of a dental curing instrument, the optical device comprising:

a lens having a first end that is substantially flat and a second end that is curved, wherein the first end is configured so as to receive light emitted from the light-generating source, and wherein the second end is configured for focusing the light received by the first end; and

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a transparent shield configured so as to hold the first end of the lens adjacent to the light-generating source, the transparent shield protecting the lens from contact while enabling light from the light-generating source to pass through the transparent shield.

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13. (Amended) An optical device as defined in claim 12, wherein the lens and the transparent shield each comprise at least one of glass, aluminum dioxide, sapphire, quartz, acrylic, polyacrylic, polypropylene, and silicone.

14. (Amended) An optical device as defined in claim 13, wherein the second end of the lens is at least one of hyperbolic, ellipsoidal, and parabolic.

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15. (Amended) An optical device as defined in claim 14, wherein the lens focuses the light entering the first end of the aspheric lens into a column of light having a diameter of about 8 mm at a distance of about 3 mm to about 10 mm away from the second end of the lens.

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16. (Amended) An optical device as defined in claim 15, wherein the dental instrument includes an extension arm and an LED attached to an end of the extension arm.

18. (Amended) A light-generating and focusing assembly comprising:

a light-emitting diode;

a lens having a first end that is substantially flat and a second end that is curved, wherein the first end is positioned so as to receive light from the light-emitting diode, and wherein the second end is configured so as to focus light received by the first end in a desired manner; and

a transparent shield configured so as to protect the lens from physical contact during use and so as to allow light to pass through the transparent shield.

19. (Amended) A light-generating and focusing assembly as defined in claim 18, wherein the lens and the transparent shield comprise at least one of glass, aluminum dioxide, sapphire, quartz, acrylic, polyacrylic, polypropylene, and silicone.

20. (Amended) A light-generating and focusing assembly as defined in claim 18, wherein at least a portion of the second end of the lens is aspheric and is at least one of hyperbolic, ellipsoidal, and parabolic.

Please add new claims 21-30 as follows:

21. (New) A light-generating and focusing assembly as defined in claim 18, wherein at least a portion of the second end of the lens is hemispherical.

22. (New) A light-generating and focusing assembly as defined in claim 18, wherein the first end of the lens is positioned adjacent to the light-emitting diode.

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23. (New) A light-generating and focusing assembly as defined in claim 22, further including a gap between the lens and light-emitting diode such that they are not in abutting contact.

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24. (New) A light-generating and focusing assembly as defined in claim 18, wherein the assembly is attached to an extension arm of a dental light curing apparatus.

25. (New) A light-generating and focusing assembly as defined in claim 24, wherein the lens is removably attached to the extension arm.

26. (New) A light-generating and focusing assembly as defined in claim 24, wherein the transparent shield is removably attached to the extension arm.

27. (New) A light-generating and focusing assembly as defined in claim 24, wherein the lens is attached to the extension arm by the transparent shield.

28. (New) A light-generating and focusing assembly as defined in claim 24, wherein the lens is attached to the extension arm independently of the transparent shield.

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cond* } 29. (New) An optical device as defined in claim 1, wherein the means for holding maintains a gap between the lens and the light-generating source such that they are not in abutting contact.

30. (New) An optical device as defined in claim 12, wherein the transparent shield holds the lens in a manner so as to maintain a gap between the lens and the light-generating source such that they are not in abutting contact.
